Today's Speakers

Angela Mills is a Senior Product Manager for the Johns Hopkins ACG System. With extensive experience in health care analytics and product development, Angela plays a key role in ensuring that the ACG System meets the needs of an ever-changing health care landscape. She is passionate about leveraging data-driven solutions to optimize care management and support value-based care initiatives.

Amy Salls is Senior Director of Health Analytics at SS&C Health, has extensive experience in health care analysis and health care informatics. Amy is responsible for a diverse portfolio of solutions designed to help managed care organizations navigate complex business processes such as risk stratification, provider performance assessment, encounter submissions and quality reporting. Her expertise includes more than 20 years executing population health initiatives in support of the vital collaboration between SS&C Health and Johns Hopkins to distribute the ACG System.

Paul Molyneux is a Senior Consultant with the ACG System team, supporting ACG System customers globally to get the most value from the software. He has more than 15 years' experience with health and social care information analysis, as well as consultative and strategic experience gained in prominent public and private sector health care organizations both nationally in the UK and internationally.

Agenda

- Defining population segmentation
- Real-world application
- Q&A

Population Segmentation

Dividing and conquering
Data-driven approach that divides a whole — typically large and diverse — population into smaller homogenous and more manageable subgroups based on their characteristics and needs

What does "good" look like?

- Inclusive and comprehensive
- Evidence-based and transparent
- Flexible and adaptable
- Supported and maintained

"The ultimate test of a good segmentation is whether it is understood, accepted, and used effectively by the organisation. A segmentation that is not understood or embraced will fail to drive meaningful action, regardless of its analytical sophistication."

— David J. Batholomew

Patient Need Groups (PNGs)

Shift from a single analytic score to a validated, comprehensive approach to patient segmentation.

PNGs assign individuals into mutually exclusive groups based on overall health needs, allowing users to stay one step ahead of their population's needs with an advanced view of segment-level performance and trends.

Non-User	Low Need Child	Low Need Adult	Low Complexity Morbidity	Medium Complexity Morbidity	Pregnancy Low Complexity	Pregnancy High Complexity	Dominant Psychiatric Condition	Dominant Major Chronic Condition	Multi-Morbidity High Complexity	Frailty

Low ——————————————————————→ High

Health Needs

PNG Toolkit – Care Modifiers

Care Modifiers are actionable patient-specific factors with known opportunity to improve care that can be leveraged to **filter down and further stratify** a PNG segment.

Demographic: Age or Sex

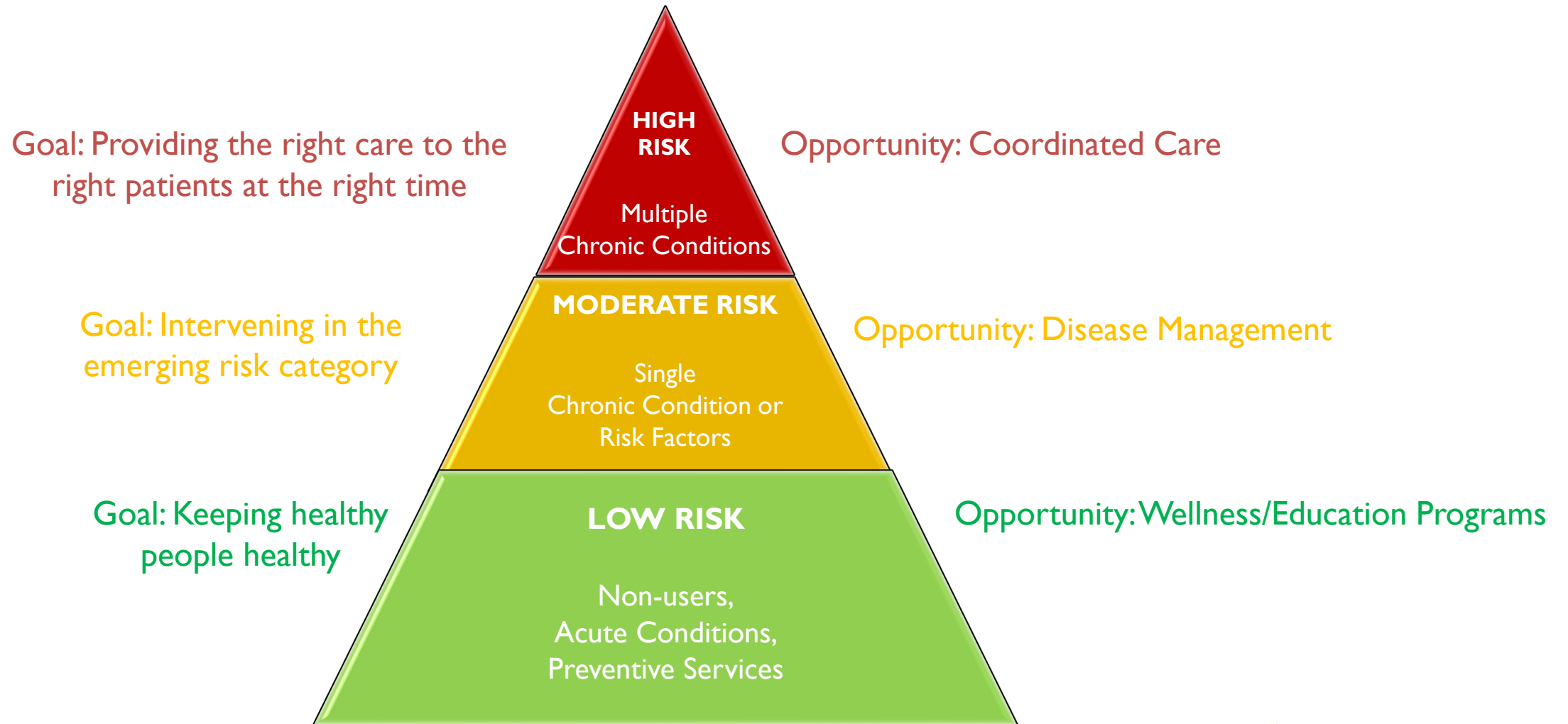**Psychiatric/Behavioral:** Substance or Tobacco use

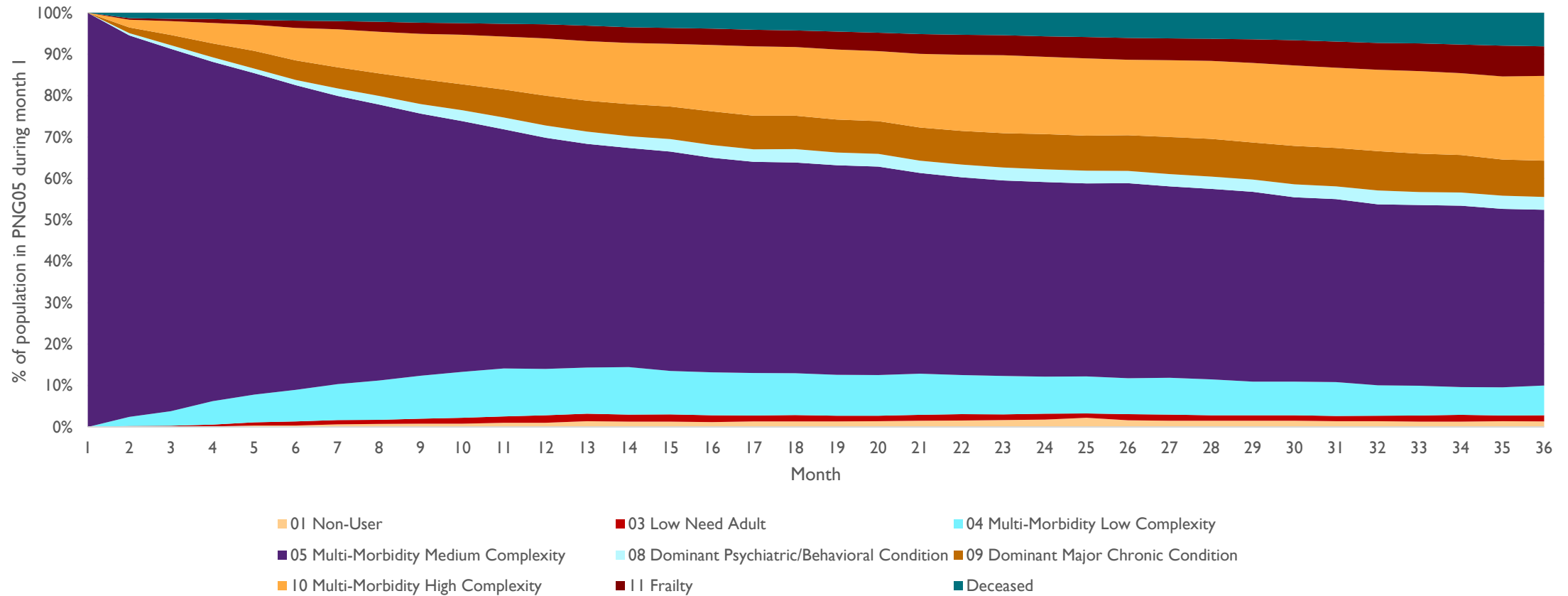**Special Medical Needs:** Cardiometabolic risk or Polypharmacy

Coordination Needs: Care Coordination opportunity or Lack of Primary Care

PNG Toolkit – Risk Stratification

Goal: Providing the right care to the right patients at the right time

Opportunity: Coordinated Care

HIGH RISK

Multiple Chronic Conditions

Goal: Intervening in the emerging risk category

Opportunity: Disease Management

MODERATE RISK

Single Chronic Condition or Risk Factors

Goal: Keeping healthy people healthy

Opportunity: Wellness/Education Programs

LOW RISK

Non-users, Acute Conditions, Preventive Services

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Morbidity Over Time In An Elderly Population

Distribution of PNGs over time for Rising Risk population

Legend:
- 01 Non-User
- 03 Low Need Adult
- 04 Multi-Morbidity Low Complexity
- 05 Multi-Morbidity Medium Complexity
- 08 Dominant Psychiatric/Behavioral Condition
- 09 Dominant Major Chronic Condition
- 10 Multi-Morbidity High Complexity
- 11 Frailty
- Deceased

Y-axis: % of population in PNG05 during month I
X-axis: Month

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Rising Risk Adults

Top Conditions
Prevalence / 1000

Condition	Prevalence / 1000
Refractive errors	~410
Nonspecific signs and symptoms	~330
Neurologic signs and symptoms	~285
Obesity	~275
Disorders of lipid metabolism	~275
Hypertension, w/o major complications	~270
Musculoskeletal signs and symptoms	~260
Anxiety, neuroses	~235
Acute upper respiratory tract infection	~235
Low back pain	~225
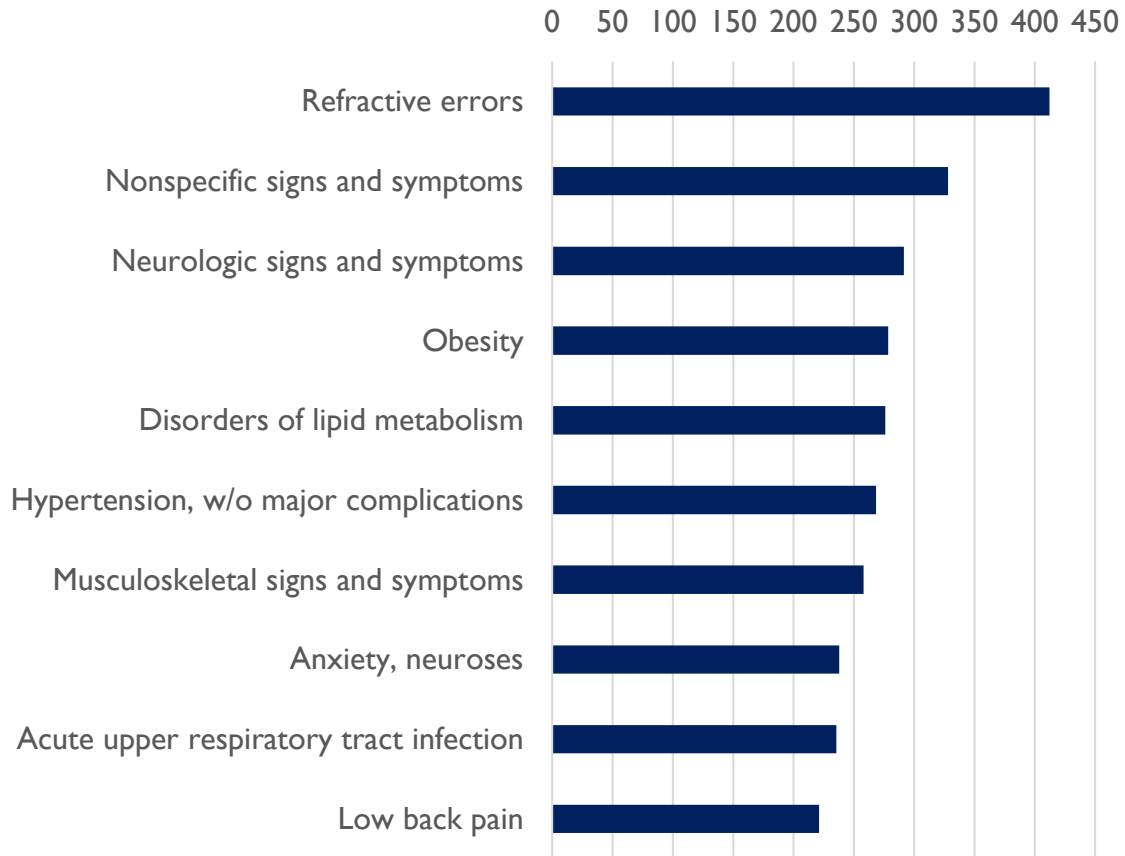
Key Utilization Metrics

Metric	Value
Percent of total population	8.2%
Percent of adults (18-64)	12.7%
Avg Total Cost	$6,163
Avg Pharmacy Cost	$2,094
Inpatient Hospitalizations/1000	27
Inpatient Days/1000	102
Emergency Visits/1000	840
Outpatient Visits/1000	22304
Generalist Visits/1000	4076
Management Visits/1000	5375

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Rising Risk Adults

Care Modifier	% of Population
Non-major psychiatric	42%
Substance Use	14%
Tobacco Use	17%
Cardio-Metabolic Risk	58%
Polypharmacy (5 or more ingredients)	61%
Severe Polypharmacy (10 or more ingredients)	24%
Coordination risk	4%
Lack of Primary Care	9%

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Turn Models into Actionable Insights
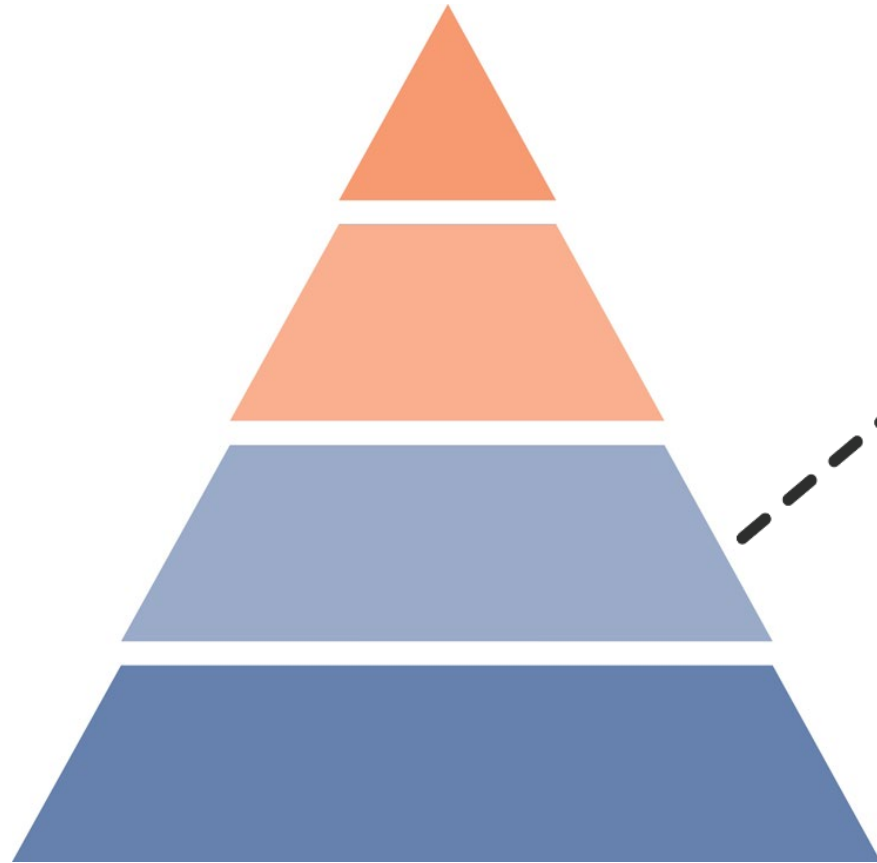
Rising Risk Chronic Disease Patients:

- Average 2 chronic conditions and 5 meds
- 45% medication gaps
- 28% lack PCP care
- 10% tobacco users
- 20% w/ mental health comorbidity
- 15% social need

Predictive models are used to **understand future outcomes** and **generate a population-level view**.

Questions?

Thank you!

For more information, please contact us at **acginfo@jh.edu** or visit **hopkinsacg.org**.